

**Electronic Assembly Comprising Ceramic/Organic Hybrid Substrate with  
Embedded Capacitors and Methods of Manufacture**

5

**Abstract of the Disclosure**

To reduce switching noise, the power supply terminals of an integrated circuit die  
are coupled to the respective terminals of at least one embedded capacitor in a multilayer  
10 ceramic/organic hybrid substrate. In one embodiment, a ceramic portion of the substrate  
includes at least one capacitor formed of a high permittivity layer sandwiched between  
conductive planes. An organic portion of the substrate includes suitable routing and fan-  
out of power and signal conductors. The organic portion includes a build-up of multiple  
layers of organic material overlying the ceramic portion. Also described are an  
15 electronic system, a data processing system, and various methods of manufacture.

"Express Mail" mailing label number: EL618477004US

Date of Deposit: August 30, 2000

This paper or fee is being deposited on the date indicated above with  
the United States Postal Service pursuant to 37 CFR 1.10, and is  
addressed to the Commissioner for Patents, Box Patent Application,  
Washington, D.C. 20231.